

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

IN THE CLAIMS:

1. (Currently Amended) A method for manufacturing carbon/silicon-carbide composite comprising the steps of:

- 1) hardening a stacked carbon/phenolic preform;
- 2) subjecting said preform to carbonizing and heat processing conditions up to 2300°C sufficiently to carbonize said preform;
- 3) infiltrating liquid metal silicon into said preform to react said silicon with carbon in the preform to form silicon-carbide and simultaneously sintering said hardened and carbonized preform by infiltrating it with liquid metal silicon between the temperatures of 1400°C and 1800°C; and
- 4) forming an anti-oxidation layer on the surface of said hardened and carbonized preform by introducing gaseous SiO₂ to react with any remaining unreacted carbon and silicon, while heat-processing said hardened and carbonized preform within the temperature range of 2000°C – 2700°C.

2. (Previously Presented) The method according to claim 1, wherein the carbon/phenolic preform is prepared by a method selected from the group consisting of:

press molding, tape wrapping with internal and external compression, sewing 2-dimensional fabrics with thermal resistant fiber to make a 3-dimensional preform, and the involute method.

3. (Original) The method according to Claim 2, wherein the fiber used for sewing is one of carbon fiber, quartz fiber, silica fiber, or tungsten line.

4. (Canceled)

5. (Currently Amended) The method according to ~~either claim 1 or claim 4~~, wherein a discharge passage of dissolute gas is made by making holes on the hardened preform in step 2).

6. (Previously Presented) The method according to claim 5, wherein the discharge passage is made by making holes of 0.5mm~1.5mm diameter with 5mm~20mm interval if the hardened preform is rectangular box shape.

7. (Original) The method according to Claim 5, wherein the discharge passage is made by making holes of 0.5mm~1.5mm diameter with 5mm~20mm interval if the hardened test piece is hollow cylinder shape.

8. (Currently Amended) The method according to ~~either claim 1 or claim 4~~, wherein graphite and coke powder are put into a graphite box with a hole and wrap up the entire surface of the hardened preform as thick as 1.5 times of maximum thickness of the hardened preform when carbonization and heat processing are performed in the step 2).

9. (Currently Amended) The method according to ~~either Claim 1 or Claim 4~~, wherein high purity metal silicon of 98%~99.9% silicon purity is used as 110%~130% weight comparing to that of carbonized product.

10. (Currently Amended) The method according to ~~either claim 1 or claim 4~~ further comprising a step of coating boron nitride compound composed of 70~80% BN, 10~20% acetone, and 0~10% water on the surface of hardened preform after the step 3) is finished.

11. (Previously Presented) The method according to Claim 1 which includes the step of forming an anti-oxidation layer on the surface of said hardened and carbonized preform by introducing gaseous SiO_2 to react with any remaining unreacted carbon and silicon, while heat-processing said hardened and carbonized preform within temperature range of 2000°C – 2700°C .

12. (Currently Amended) A method for manufacturing carbon/silicon-carbide composite comprising the steps of:

- 1) forming a carbon/phenolic preform by stacking carbon/phenolic fibers/fabric
- 2) hardening the carbon/phenolic preform;
- 3) subjecting said preform to carbonizing and heat processing conditions up to 2300°C , sufficient to carbonize said preform;

- 4) infiltrating liquid metal silicon into said preform to react said silicon with carbon in the preform to form silicon-carbide and simultaneously sintering said hardened and carbonized preform by infiltrating it with liquid metal silicon between the temperature of 1400°C and 1800°C ; and

- 5) forming an anti-oxidation layer on the surface of said hardened and carbonized preform by introducing gaseous SiO_2 to react with any remaining unreacted carbon and silicon, while heat-processing said hardened and carbonized preform within the temperature range of 2000°C ~ 2700°C .

13. (Previously Presented) The method according to claim 12, wherein the carbon/phenolic preform is formed by a method selected from the group of consisting of:

press molding, tape wrapping with internal and external compression, sewing 2-dimensional fabrics with thermal resistant fiber to make 3-dimensional preform, and involute method.

14. (Previously Presented) The method according to claim 12, wherein the carbonization and the heat processing are performed at the same time in the step 3).

15. (Previously Presented) The method according to ~~either~~ claim 12, wherein a discharge passage of dissolute gas is made by making holes on the hardened preform in the step 3).

16. (Previously Presented) The method according to claim 15, wherein the discharge passage is made by making holes of 0.5mm~1.5mm diameter with 5mm~20mm interval if the hardened preform is rectangular box shape.

17. (Previously Presented) The method according to claim 15, wherein the discharge passage is made by making holes of 0.5mm~1.5mm diameter with 5mm~20mm interval if the hardened test piece is hollow cylinder shape.

18. (Previously Presented) The method according to ~~either~~ claim 12, wherein graphite and coke powder are put into a graphite box with a hole and wrap up the entire surface of the hardened preform as thick as 1.5 times of maximum thickness of the hardened preform when carbonization and heat processing are performed in the step 3).

19. (Previously Presented) The method according to claim 12, wherein high purity metal silicon of 98%~99.9% silicon purity is used as 110%~130% weight comparing to that of carbonized product.

20. (Previously Presented) The method according to claim 12, further comprising a step of coating boron nitride compound composed of 70~80% BN, 10~20% acetone, and 0~10% water on the surface of hardened preform after the step 4) is finished.